Attorney Docket No.:J6877(C)
Serial No.:11/764,114
Filed: January 23, 2004
Confirmation No.:7895

BRIEF FOR APPELLANT

Sir:

This is a Brief on appellant's Appeal from the Examiner's Final Rejection concerning the above-identified application.

The Commissioner is hereby authorized to charge any additional fees, which may be required to our deposit account No. 12-1155, including all required fees under: 37 C.F.R. §1.16; 37 C.F.R. §1.17; 37 C.F.R. §1.18.; 37 C.F.R. §1.136.

BRIEF FOR APPELLANT

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I. REAL PARTY IN INTEREST

Unilever Home & Personal Care USA, Division of Conopco, Inc. is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

There are no other prior or pending appeals or interferences or judicial proceedings known to appellant, the appellant's legal representative, or assignee which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending Appeal.

III. STATUS OF CLAIMS

Claims 1-13, 15-17,19 and 20 are on Appeal.

Claim 14 has been cancelled. Claim 18 is withdrawn. Original claims 1, 13, and 17 were amended during prosecution. Claims 2-12 and 15-16 are original unamended claims. Claims 19 and 20 are new claims added during prosecution and not amended.

IV. STATUS OF AMENDMENTS

No claims were amended subsequent to the Final Office Action.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 1 is directed to mild aqueous shampoo composition having excellent detangling and conditioning properties. The composition comprises the following claim elements which are mapped out below referring to the specification by page and line number:

	CLAIM ELEMENT	SPECIFICATION
(1)	about 6 to about 8% of an alkyl ethoxy sulfate surfactant wherein the alkyl group has an average of 12-16 carbon atoms and the degree of ethoxylation is at least 3	Page 4, lines 16,21 and 25; Page 5, line 6
(2)	from about 2% to about 7% of a betaine surfactant	Page 5, lines 10-29; Page 3, line 14
(3)	from about 2% to about 7% of a hydroxysultaine surfactant	Page 6, lines 1-18 Page 3, line 15
(4)	from about 0.1% to about 5% of a non-volatile, water-insoluble silicone	Page 7, lines 16-23
(5)	at least about 70 wt% water	Page 3, line 17
(6)	less than about 2% of an added surfactant selected from the group consisting of alkyl sulfates and alkyl or alkyl aryl sulfonates, ethoxylated	Page 7, lines 9-12

	alkylphenols and ethanolamides of aliphatic acids	
(7)	wherein the weight ratio of the betaine surfactant to the hydroxysultaine surfactant is in the range of from about 0.5 to about 1.5	Page 6, lines 22-23
(8)	wherein the weight ratio of the alkyl ethoxy sulfate surfactant to the sum of the weights of betaine surfactant and hydroxysultaine surfactant is in the range of from about 0.5 to about 1.5	Page 6, lines 25-27
(9)	wherein the composition is not a potential eye irritant as measured by having has either a Zein solubility of less than about 1% as measured by the Zein Solubility In-Vitro Assay or a % permeability of fluorescein leakage less than about 10% as measured by the Fluorescein Leakage Assay	Page 34, line 26-28; Original claim 14
(10)	the composition has a wet-combing force less than about 20 gm-force as measured by the Wet and Dry Combing Force In-Vitro Assay.	Page 34, line 29 to page 35, line 2; Original claim 14

Dependent claim 2 specifies a level of alkyl ethoxy sulfate of from 5% to about 10% for the composition of claim 1. (see page 5, lines 5 - this claim contains an informality that was inadvertently not corrected during prosecution).

Dependent claim 3 specifies preferred types of betaine surfactants for the composition of claim 1. (see page 5, lines 24-29)

Dependent claim 4 specifies preferred types of hydroxysultaine surfactants for the composition of claim 1. (see page 6, lines 13-18)

Dependent claim 5 specifies that the non-volatile silicone of claim 1 is a microemulsion. (see page 16, lines 21-29)

Dependent claim 6 specifies that the non-volatile silicone of claim1 has a viscosity greater than 10,000 CST and is selected from the group consisting of dimethicone, dimethiconal, a cross-linked dimethicone or dimethiconal, a silicone gum, an organomodified silicone and mixtures thereof. (see page 9, lines 26-27; page 15, lines 14-16; page 16, lines 14-24; page 15, lines14-16 and original claim 7).

Dependent claim 7 specifies a narrower wt% ratio of betaine surfactant to hydroxysultaine surfactant of about 0.75 to 1.25 for the composition of claim 1. (see original claim 7)

Dependent claim 8 specifies a narrower wt% ratio of the alkyl ethoxy ether sulfate to the sum of the betaine surfactant and the hydroxysultaine surfactant of from about 0.7 to 1.3 for the composition of claim 1. (see original claim 8)

Dependent claim 9 specifies that the composition also includes cationically modified cellulose.

Dependent claim 10 specifies that the polymer recited in claim 9 is Polyquaterium-10. ((see page 19, lines 13-18)

Dependent claim 11 specifies that the composition of claim 1 further includes a polyethylene glycol fatty diester selected from the group consisting of PEG 120 methyl glucoside dioleate, PEG-150 pentaerythrityl, PEG-75 dioleate, PEG-150 distearate and mixtures thereof. (see page 24, lines 15-22 and original claim 11).

Dependent claim 12 specifies that the polyethylene glycol fatty diester recited in claim 11 is PEG 150 distearate. (see page 24, lines 24-25)

Dependent claim 13 specifies that the composition recited in claim 11 also includes an electrolyte selected form the group consisting of sodium chloride, sodium citrate, sodium sulfate, sodium bromide, sodium iodide and mixtures thereof. (see page 24, line 28 and 29 and original claim 13)

Dependent claim 15 specifies that the composition of claim 1 includes aesthetic and adjunct shampoo ingredients selected from the group consisting of perfumes, pearlizing and opacifying agents, interference pigments, dyes, colorants, sensates, preservatives, thickeners, emulsion stabilizers, and mixtures thereof. (See pages 25, lines 12-18)

Dependent claim 16 specifies that the composition of claim 1 includes skin and hair benefit agents selected from the group consisting of cholesterol, ceramides, and pseudoceramides, non-silicone hair conditioning agents, humectants, antimicrobial agents, sunscreens, chelating agents, botanical extracts, and mixtures thereof. (see page 25, lines 20-27)

Independent claim 17 is directed to mild aqueous shampoo composition having excellent detangling and conditioning properties. The claim elements are mapped below:

	CLAIM ELEMENT	SPECIFICATION
	A mild aqueous shampoo composition having excellent detangling and conditioning properties consisting essentially of	Page 34, line 9 to page 35, line 2
(1)	about 6 to about 8% of an alkyl ethoxy sulfate surfactant wherein the alkyl group has an average of 12-16 carbon atoms and the degree of ethoxylation is at least 3	Page 4, lines 16,21 and 25; Page 5, line 6
(2)	from about 2% to about 7% of a betaine surfactant selected from the group consisting of alkylamido betaine, alkyl betaine, and alkyl amidoalkyl betaine	Page 5, lines 10-29; Page 3, line 14
(3)	from about 2% to about 7% of a hydroxysultaine surfactant	Page 6, lines 1-18; Page 3, line 15
(4)	from about 0.05% to about 2% of a cationically modified cellulose	page 19, lines 13-14; original claim 17
(5)	from about 0.1% to about 5% of a non-volatile, water-insoluble silicone	page 7, lines 16-23
(6)	from about 0.02% to about 1.0% of a polyethylene glycol fatty diester	page 24, line 24; original claim 17
(7)	from about 0.1% to about 1.0% of an electrolyte selected from the group consisting of sodium	original claim 17

	chloride, sodium citrate, sodium sulfate, sodium bromide, sodium iodide and mixtures thereof.	
(8)	at least about 70 wt% water	Page 3, line 17
(9)	less than about 2% of an added surfactant selected from the group consisting of alkyl sulfates and alkyl or alkyl aryl sulfonates ethoxylated alkylphenols and ethanolamides of aliphatic acids	Page 7, lines 9-12; Page 34 lines 23-26
(10)	wherein the weight ratio of the betaine surfactant to the hydroxysultaine surfactant is in the range of from about 0.5 to about 1.5	Page 6, lines 22-23
(11)	wherein the weight ratio of the alkyl ethoxy sulfate surfactant to the sum of the weights of betaine surfactant and hydroxysultaine surfactant is in the range of from about 0.5 to about 1.5	Page 6, lines 25-27
(12)	wherein the composition is not a potential eye irritant as measured by having either a Zein solubility of less than about 1% as measured by the Zein Solubility In-Vitro Assay or a % permeability of fluorescein leakage less than about 10% as measured by the Fluorescein Leakage Assay	Page 34, line 26-28 Original claim 14
(13)	wherein the composition has a wet-combing force less than about 20 gm-force as measured by the Wet and Dry Combing Force In-Vitro Assay.	Page 34, line 29 to page 35, line 2; Original claim 17

Independent claim 19 specifies that the composition of claim 1 has a Zein solubility of less than about 1% as measured by the Zein Solubility In-Vitro Assay. (see page 34, line 26 to page 35, line 2)

Independent claim 20 specifies that the composition of claim 1 has a % permeability of fluorescein leakage less than about 10% as measured by the Fluorescein Leakage Assay. (see page 34, line 26 to page 35, line 2)

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Are claims 1-4, 7-9, 15, 16, 19 and 20 obvious under 35 USC §103 (a) as being unpatentable over WO 00/02532 ('532)?

Are claims 1-4, 6-10, 15, 16, 19 and 20 obvious under 35 USC §103 (a) as being unpatentable over Patel et al (US 6,165,454)?

Are claims 1-4, 6-9, 11,12, 15, 16, 19 and 20 obvious under 35 USC §103 (a) as being unpatentable over Alverado et al (US 2003/0022799)?

Are claims 1-4, 6-10, 15, 16, 19 and 20 obvious under 35 USC §103 (a) as being unpatentable over Baravetto et al (US 6,174,552)?

Are claims 1-10, 15, 16, 19 and 20 obvious under 35 USC §103 (a) as being unpatentable over Fairley et al (US2002/0192180) or WO 99/53889 ('889)?

Are claims 11-13 and 17 obvious under 35 USC §103 (a) as being unpatentable over Patel et al (US 6,165,454), Fairley et al (US2002/0192180), (WO 99/53889), WO 00/02532 or Baravetto et al (US 6,174,522) in view of Booker et al (US 2003/0114323)?

Is claim 5 obvious under 35 USC §103 (a) as being unpatentable over Baravetto et al (US 6,174,552) as applied to claims 1-4, 6-10 and 13-16 and further in view of Fairley et al (US 2002/0192180)?

Are claims 5 and 6 obvious under 35 USC §103 (a) as being unpatentable over WO 00/02532 as applied to claims 1-4, 7-9, 15, 16, 19 and 20 in view of Fairley et al (US2002/0192180)?

VII. APPELLANT'S ARGUMENTS

Are claims 1-4, 7-9, 15, 16, 19 and 20 obvious under 35 USC §103 (a) as being unpatentable over WO 00/02532 ('532)?

'532 addresses cleansing compositions with improved rinse feel. The compositions comprise anionic and/or amphoteric surfactants and a polymeric ester comprising a polyol; a monocarboxylic acid having 4-30 carbon atoms and a dicarboxylic acid. The compositions are claimed to provide improved in-use sensory feel at the same time being "exceptionally mild to skin".

'532 discloses C12-C18 alkyl ethoxy sulfate having 1-12 moles EO as suitable anionic surfactants (page 6, lines 25-28) at a level of 0.1 to 30% (page 8, lines 29-30).

Suitable anionic surfactant also include alkyl sulfates and alkyl aryl (benzene) sulfonates (page 6, lines 11-12 and lines 20-21) with no restrictions placed on their levels. Alkyl Betaines (page 12, lines 25-26) and hydroxyl sultaine surfactants are disclosed as suitable surfactants at a level between 0.1-20%.

'532 does not disclose any specific mixtures of an alkyl ethoxy (3EO) sulfate, a betaine surfactant and a hydroxysultaine surfactant and does not hint to any criticality concerning the ratios of the betaine surfactant to the hydroxysultaine surfactant and of the alkyl ethoxy sulfate surfactant to the sum of the betaine surfactant and the hydroxysultaine surfactant.

'532 does not disclose any specific restrictions on the levels of alkyl sulfates and alkyl aryl (benzene) sulfonates that should be present in the composition.

'532 does not disclose any specific restrictions on the levels of water in the composition.

'532 is silent about any test methods to quantify ocular irritation and wet-combing force nor provides any quantitative standards for low eye irritation potential and wet combing force.

In contrast appellants' invention is directed to a very different problem from '532, namely a "mild tear-free composition that combines excellent in-use properties with effective hair conditioning/detangling benefits yet is both thick and efficient so that it is economical for use by children and teenagers." (page 2 lines 7-9). The solution to this problem discovered by appellants is the compositions of claims 1 which incorporates numerous criticalities not explicitly taught in '532. These criticalities include:

- ratio of betaine surfactant to the hydroxysultaine surfactant of 0.5 to 1.5 (0.75 to 1.25 in claim 7).
- ratio of alkyl ethoxy sulfate surfactant to the sum of the betaine surfactant and the hydroxysultaine surfactant of 0.5 to 1.5 (0.7 to 1.3 in claim 8).
- less than 2% of alkyl sulfates, alkyl or alkyl aryl (e.g., benzene) sulfonates, ethoxylated alkylphenols, or ethanolamides of aliphatic acids present in the composition.
- at least 70% water.
- Zein solubility less than 1% in a defined assay or %permeability of fluorescein leakage less than 10% in a defined assay (both requirements to ensure that the total composition has sufficiently low ocular irritation potential, so as be tear-free (see page 34)
- Wet-combing force less than 20 gm on a defined assay so as to ensure the total composition provides good conditioning/detangling (see page 34).

In the Final Office Action, the Examiner admitted that '532 does not teach with sufficient specificity a cleansing composition having the physical parameters containing an alkyl ethoxy sulfate surfactant, a betaine surfactant, a hydroxysultaine surfactant, a non-volatile, water insoluble silicone, water and the other requisite components of the composition in the specific proportions as recited by the instantant claims.

Nevertheless, the Examiner asserted that it would have been obvious to one of ordinary skill in the art to have formulated a cleansing composition having the specific physical parameters containing an alkyl ethoxy sulfate, a betaine surfactant and a hydroxysultaine surfactant and the other requisite components in the specific proportions as recited in appellants' claims "because the broad teachings of '532 suggests a

cleansing composition having the specific physical parameters containing an alkyl ethoxy sulfate surfactant, a betaine surfactant, a hydroxylsultaine surfactant, a non-volatile, water insoluble silicone, water and the other requisite components of the composition in the specific proportions as recited by the instant claims". Applicants' disagree. As discussed above, '532 does not explicitly teach a composition incorporating any of one of the criticalities discussed above let alone all of them.

Furthermore, because '532 is silent with respect to the goals of achieving tear-free ocular mildness and low wet-combing force, '532 would not have provided the skilled artisan with any way to know that the very extensive experimentation needed to identify the recited criticalities discussed above would have had any value whatsoever. Since '532 does not provide any means to asses any of these target properties, the skilled artisan would not have been able to arrive at the last two elements of appellants' claimed invention which serve to limit both the expressly recited ingredients as well as optional ingredients that could be incorporated in the composition without compromising ocular irritation and detangling performance.

Throughout the various Office Actions, the Examiner has sought to marginalize various compositional and physical limitations embodied in appellants' claims. To better appreciate the role of the composition and physical limitations recited in appellants' claims and the extent to which they are non-obvious based on the teachings of '532 as well as all the other art cited by the Examiner, appellants respectfully draws the Boards attention to Example 5, in particular, the results in Table 5.

The compositions in Ex 5 and comparative examples C8 and C9 all would fall under the "broad disclosure" of '532. However, only the Ex 5 composition meets the criteria for adequate ocular irritation as expressed by zein solubility while C8 and C9

which embody only relatively small modification from Ex 5 surprisingly would not. C8 employs a 1EO alkyl sulfate (suitable according to '532) instead of a 3EO sulfate while C9 employs a 10% level of alkyl ethoxy 3EO sulfate (suitable according to '532) that does not allow the composition to meet the low ocular irritation target of a zein solubility less than 1% (note that this example also supports applicants narrower ratio limitation expressed in claim 7 which is even more remote from '532).

The teachings of '532 would not have provided the skilled artisan with any objective way of distinguishing C8 and C9 from Ex 5. Only the Ex 5 composition provides sufficiently low eye irritation potential to make it suitable for a tear-free shampoo designed for youngsters; a problem that could not even have been remotely inferred by a person of ordinary skill in the art based on the teaching of '532.

Based on the foregoing considerations, appellants' respectfully submit that it is only through hindsight that appellants' claimed invention could be considered obvious from the teachings of WO 00/02532 and that a person of ordinary skill in the art could not have arrived at appellants invention from a consideration of this reference.

Are claims 1-4, 6-10, 15, 16, 19 and 20 obvious under 35 USC §103 (a) as being unpatentable over Patel et al (US 6,165,454)?

Patel et al (US 6,165,454) is directed to the development of a low energy method for making stabilized hair care products comprising an anionic detersive surfactant, a water insoluble silicone and acrylic stabilizing agents. Abstract

Patel et al discloses a composition containing 4 to 50% of a detersive surfactant selected from the group consisting of C8-C18 alkyl sulfates, C8-C18 alkyl ethenoxy (1-5

EO) ether sulfates, etc; optionally: 0.1 to 15% of an amphoteric selected from the group consisting of C8-C18 alkyl betaines, C9-C18 alkyl sulfobetaines, etc, 0.1-5% of an anionic hydrotrope selected from the group consisting of C1-C3 alkyl benzene sulfonate, C5-C6 alkyl sulfonate, etc. (see column 2 lines 35 through column 3 line17.

Various other ingredients including 0.1 to 5% polyacrylic acids (anionic polymers) are disclosed.

Patel et al does not disclose any specific mixtures of an alkyl ethoxy (3EO) sulfate, a betaine surfactant and a hydroxysultaine surfactant and does not hint to any criticality concerning the ratios of the betaine surfactant to the hydroxysultaine surfactant and of the alkyl ethoxy sulfate surfactant to the sum of the betaine surfactant and the hydroxysultaine surfactant.

Patel et al does not disclose any specific restrictions on the levels of alkyl sulfates (which can be from 4 to 50%) and alkyl aryl (e.g., benzene) sulfonates (which can be 0.1 to 5%) that should be present in the composition .

Patel et al does not disclose any specific restrictions on the levels of water in the composition (all the 60 examples have water levels <70%).

Patel et al is silent about any test methods to quantify ocullar irritation and wet-combing force.

In contrast, appellants' invention is directed to a very different problem from Patel et al, namely a "mild tear-free composition that combines excellent in-use properties with effective hair conditioning/detangling benefits yet is both thick and efficient so that it is

economical for use by children and teenagers." (page 2 lines 7-9). The solution to this problem discovered by appellants' is the compositions of claims 1 which incorporates numerous criticalities not explicitly taught in Patel et al. These criticalities include:

- ratio of betaine surfactant to the hydroxysultaine surfactant of 0.5 to 1.5 (0.75 to 1.25 in claim 7).
- ratio of alkyl ethoxy sulfate surfactant to the sum of the betaine surfactant and the hydroxysultaine surfactant of 0.5 to 1.5 (0.7 to 1.3 in claim 8).
- less than 2% of alkyl sulfates, alkyl or alkyl aryl (e.g., benzene) sulfonates, ethoxylated alkylphenols, or ethanolamides of aliphatic acids present in the composition.
- at least 70% water.
- Zein solubility less than 1% in a defined assay or %permeability of fluorescein leakage less than 10% in a defined assay (both requirements to ensure that the total composition has sufficiently low ocular irritation potential so as be tear-free (see page 34)
- Wet-Combing force less than 20 gm on a defined assay so as to ensure the total composition provides good conditioning/detangling (see page 34).

In the Final Office Action, the Examiner admitted that '532 does not teach with sufficient specificity a cleansing composition having the physical parameters containing an alkyl ethoxy sulfate surfactant, a betaine surfactant, a hydroxysultaine surfactant, a non-volatile, water insoluble silicone, water and the other requisite components of the composition in the specific proportions as recited by the instantant claims.

Nevertheless, the Examiner asserted that it would have been obvious to one of ordinary skill in the art to have formulated a cleansing composition having the specific

physical parameters containing an alkyl ethoxy sulfate, a betaine surfactant and a hydroxysultaine surfactant and the other requisite components in the specific proportions as recited in appellants' claims "because the broad teachings of Patel et al suggests a cleansing composition having the specific physical parameters containing and alkyl ethoxy sulfate surfactant, a betaine surfactant, a hydroxylsultaine surfactant, a non-volatile water-insoluble silicone, water and the other requisite components of the composition in the specific proportions as recited by the instant claims". Applicants' respectfully disagree.

As discussed above, Patel et al does not explicitly teach a composition incorporating any of one of the criticalities listed above let alone all of them. In fact, all of the 60 examples in Patel et al teach compositions containing ether alkyl 2EO ethoxy sulfate and/or an akyl sulfate at a levels of over 40%. None of the 60 examples incorporates a hydroxysultone surfactant let alone a hydroxylsultone surfactant in combination with a betaine surfactant. Appellants recognize that the teaching of a reference is not limited only to the preferred embodiments. However, appellants also submit that a vast teaching in a reference as in this case (all 60 examples) can likewise not be ignored as it impacts the interpretation of what a person of ordinary skill in the art would have reasonably concluded from the reference. Appellants submit that taken together the extensive examples and the specification of Patel et al would have, at the very least, dissuaded a skilled artisan from exploring a composition space so totally and dramatically outside the scope of what is taught in the reference.

Furthermore, because Patel et al is silent with respect to the goals of achieving tear-free ocular mildness and low wet-combing force, Patel et al would not have provided the skilled artisan with any way of knowing that the very extensive experimentation needed to identify the criticalities discussed above would have had any

value whatsoever. Since Patel et al does not provide any means to asses any of these target properties, the skilled artisan would not have been able to arrive at the last two elements of appellants' claimed invention which serve to limit both the expressly recited ingredients as well as optional ingredients that could be incorporated in the composition without compromising ocular irritation and detangling performance.

Appellants have already addressed the above point in a discussion of Example 5. The same arguments apply here. That is, Patel et al would have provided no basis for an artisan to have distinguished the compositions of the invention (Ex 5) from compositions that were not sufficiently mild to be tear-free (C8 and C9).

To further illustrate the stark differences between the teachings of Patel et al compared with appellants' invention, appellants have carried out experiments measuring the eye irritation of what are believed to be the mildest four (4) compositions among the 60 compositions disclosed by Patel et al. Appellants respectfully draw the Board's attention to two declarations which were presented and entered into the record during prosecution of the application. These declarations of record are reproduced in the Evidence Appendix below.

The results in Table 2 of the "First Declaration" (dated April 17, 2006) show that the Zein solubilities of the Patel et al compositions exceed the maximum 1% level required for low irritation potential.

The results in Table 2 of The "Second Declaration", dated September 28, 2006 show that not only did the Patel et al compositions exceed the maximum Fluorescence Leakage score characteristic of compositions having low ocular irritation, they exceeded the scores of the positive control which is already highly stinging to eyes.

Thus, Patel et al teaches 60 compositions which would not meet any of the limitation of appellants' claimed invention.

Based on the foregoing considerations, appellants' respectfully submit that it is only through hindsight that appellants' claimed invention could be considered obvious from the teachings of Patel et al (US 6,165,454) and that a person of ordinary skill in the art could not have arrived at appellants invention from a consideration of this reference.

Are claims 1-4, 6-9, 11, 12, 15, 16, 19 and 20 obvious under 35 USC §103 (a) as being unpatentable over Alverado et al (US 2003/0022799)?

Alvarado et al addresses a related problem to appellants', namely a composition that is very mild to skin and eyes (page 1 paragraph [0002]) which Alvarado et al solves using a combination of anionic, nonionic and amphoteric surfactants (page 2, paragraph [0028]) . Alvarado et al teach a shampoo composition comprising about 0.005 to about 5% of a cationic deposition polymer, about 10% to about 20% on an anionic surfactant which is selected from the group consisting of an alkyl ether sulfate with at least about 2 moles of ethoxylation, about 0.5 to 1% of an organic salt of a carboxylic acid, about 6% to about 15% of a sorbitan derivative, about 3% to about 6% of a zwitterionic surfactant, about 0.25 to about 5% of an amphoteric surfactant, 0.75 to about 1.5% of an alkoxylated carboxylic acid, about 0.1 to about 5% of a silicone copolyol optionally an aerosol propellant and water (abstract). Suitable zwitterionic surfactants include cocoamido betaine and cocoamido hydroxysultaine.

Alvarado et al does not disclose any specific mixtures of an alkyl ethoxy (3EO) sulfate, a betaine surfactant and a hydroxysultaine surfactant and is silent about any

criticality concerning the ratios of the betaine surfactant to the hydroxysultaine surfactant and of the alkyl ethoxy sulfate surfactant to the sum of the betaine surfactant plus the hydroxysultaine surfactant.

Alvarado et al does not disclose any specific restrictions on the level of water in the composition.

Alvarado et al mentions in passing the Fluorescence leakage assay but is silent about any criteria which the composition must meet so as to achieve a target low eye irritation potential based on an *in-vitro* assay.

Alvarado et al is silent about Zein solubility testing and about any criteria which the composition must meet to achieve a low target eye irritation potential based on this assay.

Alvarado et al is silent about any test methods to quantify wet-combing force and any criteria which the composition should meet based on this test.

Appellants' invention is directed to a broader problem than Alverado et al, namely a "mild tear-free composition that combines excellent in-use properties with effective hair conditioning/detangling benefits yet is both thick and efficient so that it is economical for use by children and teenagers." (page 2 lines 7-9). The solution to this problem discovered by appellants' is the compositions of claim 1 which incorporates numerous criticalities not explicitly taught by Alvarado et al. These criticalities include:

- ratio of betaine surfactant to the hydroxysultaine surfactant of 0.5 to 1.5 (0.75 to 1.25 in claim 7).

- ratio of alkyl ethoxy sulfate surfactant to the sum of the betaine surfactant and the hydroxysultaine surfactant of 0.5 to 1.5 (0.7 to 1.3 in claim 8). Appellants note that the implied ratio of alkyl ethoxy surfactant to the sum of betaine surfactant plus hydroxyl sultaine surfactant is 1.66-6.66 which can be inferred by using the extremes in the quoted ranges of anionic surfactant (10% - 20%) and the zwitterionic surfactant (3-6%). Claim 8 is even more removed from Alvarado et al requiring the said ratio to be in the range 0.7 to 1.3.
- Water level at least about 70%. The suitable water content range can be inferred from the ranges of claimed ingredients recited in Alaverado et al to be 41.5% to 79.4% when the claimed ingredients are used at their extremes. (The two examples disclosed by Alvarado et al contain about 59% and 52% water respectively).
- Zein solubility less than 1% in a defined assay or %permeability of fluorescein leakage less than 10% in a defined assay (both test ensure that the total composition has sufficiently low ocular irritation potential so as to be tear-free (see page 34)
- Wet-combing force less than 20 gm on a defined assay to ensure the total composition provides good conditioning/detangling (see page 34).

In the Final Office Action, the Examiner admitted that Alvarado et al does not teach with sufficient specificity a cleansing composition having the physical parameters containing an alkyl ethoxy sulfate surfactant, a betaine surfactant, a hydroxysultaine surfactant, a non-volatile, water insoluble silicone, water and the other requisite components of the composition in the specific proportions as recited by the instantant claims.

Nevertheless, the Examiner asserted that it would have been obvious to one of ordinary skill in the art to have formulated a cleansing composition having the specific physical parameters containing an alkyl ethoxy sulfate, a betaine surfactant and a hydroxysultaine surfactant and the other requisite components in the specific proportions as recited in appellants' claims "because the broad teachings of Alvarado et al suggests a cleansing composition having the specific physical parameters containing and alkyl ethoxy sulfate surfactant, a betaine surfactant, a hydroxylsultaine surfactant, a non-volatile water-insoluble silicone, water and the other requisite components of the composition in the specific proportions as recited by the instant claims". Applicants' respectfully disagree.

As discussed above, Alvarado et al does not teach a composition incorporating any of one of the criticalities listed above let alone all of them. The two examples disclosed in Alvarado et al contain 59% and 52% water, 13 and 17.9% alkyl ethoxy sulfate respectively and these examples do not contain a hydroxysultone surfactant let alone a hydroxylsultone surfactant in combination with a betaine surfactant in the relative proportions recited by appellants. Appellants recognize that the teaching of a reference is not limited only to the preferred embodiments. However appellants also submit that significant teachings in a reference can likewise not be ignored as it impacts the interpretation of what a person of ordinary skill in the art would have reasonably concluded from the reference. Appellants submit that taken together the examples and the specification of Alvarado et al would have, at the very least, dissuaded a skilled artisan from exploring a composition space outside the scope of what is taught in the reference.

Furthermore, because Alvarado et al is silent with respect to the requirement that the compositions must be sufficiently mild not to irritate eyes based on established

experimental criteria and must have a sufficiently low wet-combing force, Alvarado et al would not have provided the skilled artisan with any way of knowing that the very extensive experimentation that would have been needed to identify the criticalities discussed above would have had any value whatsoever. Since Alvarado et al does not provide any means to asses any of these target properties, the skilled artisan would not have been able to arrive at the last two elements of appellants' claimed invention which serve to limit both the expressly recited ingredients as well as optional ingredients that could be incorporated in the composition without compromising ocular irritation and detangling performance.

The criticality of compositional limitations on eye irritation potential has already been discussed in connection with Example 5. For example, comparative example C9 contains 10% of an alkylethoxy 3EO sulfate which would fall within the range for this surfactant disclosed by Alvarado et el (about 10% to about 20%). This composition has a zein solubility of 1.475 (>1%) and would not be suitable for a tear-free composition. In contrast, Ex 5 which contains 7% an alkylethoxy 3EO sulfate which is within applicants range has a zein solubility of 0.94% thus meeting the less than 1% requirement and thus would be expected to be suitable for a tear-free shampoo composition.

Based on the foregoing considerations, appellants' respectfully submit that it is only through hindsight that appellants' claimed invention could be considered obvious from the teachings of Alverado et al (US 2003/0022799) and that a person of ordinary skill in the art could not have arrived at appellants invention from a consideration of this reference.

Are claims 1-4, 6-10, 15, 16, 19 and 20 obvious under 35 USC §103 (a) as being unpatentable over Baravetto et al (US 6,174,552)?

The objective of Baraveto et al is a shampoo that provides "excellent cleaning in combination with improved conditioning, while minimizing the adverse effects associated with build-up of conditioning agents on the hair". (column 4 lines 1-5, emphasis added)

Baravetto et al discloses a composition that can contain 5% - 50% of a surfactant by weight. Suitable anionic surfactants include alkyl sulfates, alkyl ether (1-10 EO) sulfates. Suitable amphoteric surfactants include betaines, sultaines, etc such as amidohydroxysultaines, cocoamidopropylbetaine, etc (see column 7, line 50 to column 8, line 50; column 24, lines 15-69. Various additional components such as non-volatile silicones, Polyquaternium -10 etc are also taught.

Baravetto et al does not disclose any specific mixtures of an alkyl ethoxy (3EO) sulfate, a betaine surfactant and a hydroxysultaine surfactant and does not hint to any criticality concerning the ratios of the betaine surfactant to the hydroxysultaine surfactant and of the alkyl ethoxy sulfate surfactant to the sum of the betaine surfactant and the hydroxysultaine surfactant.

Baravetto et al does not disclose any specific restrictions on the levels of alkyl sulfates (which can be from 5% to 50%) and alkyl aryl (e.g., benzene) sulfonates (which can be 5% - 50%) that should be present in the composition. In fact, both ammonium lauryl sulfate and sodium dodecyl benzene sulfonate are listed as preferred anionic surfactants (Column 7, lines 30, 31, 46)

Baravetto et al does not disclose any specific restrictions on the levels of water in the composition (from 20% to 94% column 22, lines 40-50).

Baravetto et al is silent about any test methods to quantify ocullar irritation and wet-combing force.

In contrast appellants' invention is directed to a very different problem from Baravetto et al, namely a "mild tear-free composition that combines excellent in-use properties with effective hair conditioning/detangling benefits yet is both thick and efficient so that it is economical for use by children and teenagers." (page 2 lines 7-9). The solution to this problem discovered by appellants' is the compositions of claim 1 which incorporates numerous criticalities not explicitly taught in Baravetto et al. These criticalities include:

- ratio of betaine surfactant to the hydroxysultaine surfactant of 0.5 to 1.5 (0.75 to 1.25 in claim 7).
- ratio of alkyl ethoxy sulfate surfactant to the sum of the betaine surfactant and the hydroxysultaine surfactant of 0.5 to 1.5 (0.7 to 1.3 in claim 8).
- less than 2% of alkyl sulfates, alkyl or alkyl aryl (e.g., benzene) sulfonates, ethoxylated alkylphenols, or ethanolamides of aliphatic acids present in the composition.
- at least 70% water.
- Zein solubility less than 1% in a defined assay or %permeability of fluorescein leakage less than 10% in a defined assay (both requirements to ensure that the total composition has sufficiently low ocular irritation potential, so as be tear-free (see page 34).

- Wet-combing force less than 20 gm on a defined assay so as to ensure the total composition provides good conditioning/detangling (see page 34).

In the Final Office Action, the Examiner admitted that Baravetto et al does not teach with sufficient specificity a cleansing composition having the physical parameters containing an alkyl ethoxy sulfate surfactant, a betaine surfactant, a hydroxysultaine surfactant, a non-volatile, water insoluble silicone, water and the other requisite components of the composition in the specific proportions as recited by the instantant claims.

Nevertheless, the Examiner asserted that it would have been obvious to one of ordinary skill in the art to have formulated a cleansing composition having the specific physical parameters containing an alkyl ethoxy sulfate, a betaine surfactant and a hydroxysultaine surfactant and the other requisite components in the specific proportions as recited in appellants' claims "because the broad teachings of Baravetto et al suggests a cleansing composition having the specific physical parameters containing and alkyl ethoxy sulfate surfactant, a betaine surfactant, a hydroxylsultaine surfactant, a non-volatile water-insoluble silicone, water and the other requisite components of the composition in the specific proportions as recited by the instant claims". Applicants' respectfully disagree.

As discussed above, Baravetto et al does not teach a composition incorporating any one of the criticalities discussed above let alone all of them. In fact, all of the 15 examples in Baravetto et al teach compositions containing an alkyl ethoxy sulfate at a level greater than 10% and one third of the examples teach an alky sulfate (Examples I-V) at levels greater than 4%. None of the 15 examples incorporates a hydroxysultone surfactant let alone a hydroxylsultone surfactant in combination with a betaine

surfactant. Appellants recognize that the teaching of a reference is not limited only to the preferred embodiments. However, appellants also submit that significant teachings in a reference as in this case (all 15 examples and stating that alkyl sulfates and alkyl benze sulfonates are preferred anionics) can likewise not be ignored as it impacts the interpretation of what a person of ordinary skill in the art would have reasonably concluded from the reference. Appellants submit that taken together the extensive examples and the specification of Baravetto et al would have, at the very least, dissuaded a skilled artisan from exploring a composition space so totally and dramatically outside the scope of what is taught in the reference.

Furthermore, because Baravetto et al is silent with respect to the goals of achieving tear-free ocular mildness and low wet-combing force, it would not have provided the skilled artisan with any way of knowing that the very extensive experimentation needed to identify the criticalities embodied in claim 1 would have had any value whatsoever. Since Baravetto et al does not provide any means to asses any of these target properties, the skilled artisan would not have been able to arrive at the last two elements of appellants' claimed invention which serve to limit both the expressly recited ingredients and well as optional ingredients that could be included in the composition without compromising ocular irritation and detangling performance.

Appellants have already addressed the above point in a discussion of Example 5. The same arguments apply here. That is, Baravetto et al would have provided no basis for a skilled person to distinguish the compositions of the invention (Ex 5) from compositions that were not sufficiently mild to be tear-free (C8 and C9). Indeed, comparative example C8 has a 1EO alkyl ethoxy sulfate while comparative C9 contains 10% of an alkyl ethoxy 3EO sulfate and both these compositions are entirely suitable according to the teachings of Baravetto et al.

To further illustrate the stark differences between the teachings of Baravetto et al compared with appellants'' invention, appellants have carried out experiments measuring the eye irritation of what is believed to be the mildest two compositions among the 15 compositions disclosed by Baravetto et al. Appellants again respectfully draw the Board's attention to the two declarations of record reproduced in the Evidence Appendix below.

The results in Table 2 of the "First Declaration" (dated April 17, 2006) show that the Zein solubilities of the "mildest Baravetto et al compositions" exceed the maximum 1% level required for low ocular irritation potential.

The results in Table 2 of The "Second Declaration", dated September 28, 2006 show that not only do these "mildest examples" exceed the maximum Fluorescence Leakage score characteristic of compositions having low ocular irritation, one of them actually exceeded the positive control which is already quite irritant to eyes.

Based on the foregoing considerations, appellants' respectfully submit that it is only through hindsight that appellants' claimed invention could be considered obvious from the teachings of Baravetto et al (US 6,174,552) and that a person of ordinary skill in the art could not have arrived at appellants invention from a consideration of this reference.

Are claims 1-10, 15, 16, 19 and 20 obvious under 35 USC §103 (a) as being unpatentable over Fairley et al (US2002/0192180) or (WO 99/53889)?

Fairley et al is directed to compositions including dispersed non-volatile, non-silicone water-insoluble oily conditioning agents. The reference teaches an aqueous

shampoo composition comprising in addition to the said conditioning agent and water, a cleansing surfactant, preferably an anionic surfactant and a cationic polymer. Suitable anionic surfactants are alkyl ethoxy (1-10 EO) sulfates, alkyl sulfates and alkyl aryl sulfonates. Amphoteric and zwitterionic surfactants can be used in amounts from 0 to 8% by weight and include alkyl amidopropyl betaines and hydroxyl sultaines. Cationic polymers, silicones etc are also taught as optional ingredients.

'889 teaches at least one cleansing surfactant, a cationic deposition polymer, a blended emulsified silicone component which includes microemulsified silicones, and various optional ingredients, etc. Suitable anionic surfactants are alkyl sulfates, alkyl aryl sulfonates, and alkyl ethoxy (1-10 EO) sulfates. Suitable amphoteric and zwitterionic surfactants include alkyl amidopropyl betaines and hydroxysultaines.

Neither Fairley et al nor '889 disclose any specific restrictions on the levels of alkyl sulfates and alkyl aryl (e.g., benzene) sulfonates that should be present in the composition. In fact, sodium lauryl sulfate is stated in both references to be among the most preferred anionic surfactant (Fairley et al page 4, paragraph [0054], '889 page 10, line 16-17).

Neither Fairley et al nor '889 discloses any specific restrictions that the levels of water in the composition be at least 70%.

Both Fairley et al and '889 are silent about any test methods to quantify ocular irritation and wet-combing force or any criteria based on any *in-vitro* measurements even remotely related to these parameters.

In contrast appellants' invention is directed to a very different problem from both Fairley et al and '889, namely a "mild tear-free composition that combines excellent in-use properties with effective hair conditioning/detangling benefits yet is both thick and efficient so that it is economical for use by children and teenagers." (page 2 lines 7-9). The solution to this problem discovered by appellants' is the compositions of claims 1 which incorporates numerous criticalities not explicitly taught in Fairley et al or '889 . These criticalities include:

- ratio of betaine surfactant to the hydroxysultaine surfactant of 0.5 to 1.5 (0.75 to 1.25 in claim 7).
- ratio of alkyl ethoxy sulfate surfactant to the sum of the betaine surfactant and the hydroxysultaine surfactant of 0.5 to 1.5 (0.7 to 1.3 in claim 8).
- less than 2% of alkyl sulfates, alkyl or alkyl aryl (e.g., benzene) sulfonates, ethoxylated alkylphenols, or ethanolamides of aliphatic acids present in the composition.
- at least 70% water.
- Zein solubility less than 1% in a defined assay or %permeability of fluorescein leakage less than 10% in a defined assay (both requirements to ensure that the total composition has sufficiently low ocular irritation potential, so as be tear-free (see page 34)
- Wet-combing force less than 20 gm on a defined assay so as to ensure the total composition provides good conditioning/detangling (see page 34).

In the Final Office Action, the Examiner admitted that neither Fairley et al nor '889 taught with sufficient specificity a cleansing composition having the physical parameters containing an alkyl ethoxy sulfate surfactant, a betaine surfactant, a hydroxysultaine surfactant, a non-volatile, water insoluble silicone, water and the other requisite

components of the composition in the specific proportions as recited by the instantant claims.

Nevertheless, the Examiner asserted that it would have been obvious to one of ordinary skill in the art to have formulated a cleansing composition having the specific physical parameters containing an alkyl ethoxy sulfate, a betaine surfactant and a hydroxysultaine surfactant and the other requisite components in the specific proportions as recited in appellants' claims "because the broad teachings of Fairley et al or '889 suggests a cleansing composition having the specific physical parameters containing and alkyl ethoxy sulfate surfactant, a betaine surfactant, a hydroxylsultaine surfactant, a non-volatile silicone water insoluble silicone, water and the other requisite components of the composition in the specific proportions as recited by the instant claims". Applicants' respectfully disagree.

As discussed above, neither Fairley et al nor '889 teach a composition incorporating any of one of the critical elements recited in applicants claims let alone all of them.

Furthermore, because Fairley et al or '889 are silent with respect to the goals of achieving tear-free ocular mildness and low wet-combing force, the references would not have provided the skilled artisan with any way of knowing that the extensive experimentation needed to identify the criticalities discussed above would have had any value whatsoever. Since Fairley et al or '889 do not provide any means to asses any of these target properties, the skilled artisan would not have been able to arrive at the last two elements of appellants' claimed invention which serve to limit both the expressly recited ingredients and well as optional ingredients that could be incorporated in the composition without compromising ocular irritation and detangling performance.

Appellants have already addressed the above point in a discussion of Example 5. The same arguments apply here. Thus, Fairley et al or '889 would not have provided any direction that would have allowed the skilled person to have distinguished the compositions of the present invention (Ex 5) from compositions that would not have been of sufficiently low eye irritation potential to be tear-free (C8 and C9) yet were entirely suitable for the purposed taught by Fairley et al. or '889.

To further illustrate the stark differences between the teachings found in Fairley et al compared with appellants' invention, appellants have carried out experiments measuring the eye irritation potential of the only example disclosed by Fairley et al. Appellants again respectfully draw the Board's attention to the declarations of record reproduced in the Evidence Appendix below.

The results in Table 2 of the "First Declaration" (dated April 17, 2006) show that the Zein solubilities of Example 1 of Fairley et al greatly exceeds (3.11%) the maximum 1% level recited in applicants claims.

The results in Table 2 of The "Second Declaration", dated September 28, 2006 show that not only did the Fairley et al example exceed the maximum Fluorescence Leakage score characteristic of compositions having low ocular irritation but actually exceeded the positive control which is already highly irritant to eyes.

Appellants recognize that the teaching of a reference is not limited only to the preferred embodiments. However, appellants also submit that significant teachings in a reference can not be ignored as it impacts the interpretation of what a person of ordinary skill in the art would have reasonably concluded from the reference. Appellants submit

based on the above discussion that taken together the examples and the specification of both Fairley et al and '889 would have, at the very least, dissuaded a skilled artisan from exploring a composition space so totally outside the scope of what is taught in these references.

Based on the foregoing considerations, appellants' respectfully submit that it is only through hindsight that appellants' claimed invention could be considered obvious from the teachings of Fairley et al (US2002/0192180) or (WO 99/53889) and that a person of ordinary skill in the art could not have arrived at appellants invention from a consideration of these reference.

Are claims 11-13 and 17 obvious under 35 USC §103 (a) as being unpatentable over Patel et al (US 6,165,454), Fairley et al (US2002/0192180), (WO 99/53889), WO 00/02532 or Baravetto et al in view of Booker et al (US 2003/0114323)?

Booker et al discloses the use of PEG-150 distearate in a cleansing composition. The Examiner asserts that it would have been obvious to combine this element with the teaching of Patel et al, Fairley et al, '889, '532 or Baravetto et al to arrive at the subject matter recited in claims 11-13.

However, claims 11-13 depend from claim 1. Appellants have already provided arguments above to support their submission that neither Patel et al, Fairley et al, '889, '532 or Baravetto et al would have rendered appellants' claim 1 obvious.

Although Booker et al teaches the use of PEG 150 distearate, Booker et al does not remedy the shortcomings of either Patel et al, Fairley et al, '889, '532 or Baravetto et

al as a 103(a) reference over claim 1. In particular, Booker et al does not teach the following critical elements recited in appellants claims:

- ratio of betaine surfactant to the hydroxysultaine surfactant of 0.5 to 1.5 (0.75 to 1.25 in claim 7).
- ratio of alkyl ethoxy sulfate surfactant to the sum of the betaine surfactant and the hydroxysultaine surfactant of 0.5 to 1.5 (0.7 to 1.3 in claim 8).
- less than 2% of alkyl sulfates, alkyl or alkyl aryl (e.g., benzene) sulfonates, ethoxylated alkylphenols, or ethanolamides of aliphatic acids present in the composition.
- at least 70% water.
- Zein solubility less than 1% in a defined assay or %permeability of fluorescein leakage less than 10% in a defined assay (both requirements to ensure that the total composition has sufficiently low ocular irritation potential, so as be tear-free (see page 34)
- Wet-Combing force less than 20 gm on a defined assay so as to ensure the total composition provides good conditioning/detangling (see page 34).

Thus, the combination of Booker et al with the other references cited would not have rendered appellants' claim 1 obvious and thus would not render claims 11-13 obvious.

Claim 17 is even more remote from the collective teachings of the assortment of references cited by the Examiner which mention various ingredients recited in applicants' claims as optional or alternative materials. There is not even one example in the collection which teaches the combination of an alkyl ethoxy sulfate, a betaine surfactant and a hydroxysultaine surfactant let alone this combination at the recited

levels and ratios in combination with the remaining ingredients and limitations in claim 17. There is no disclosure among the references of any critical value of fluorescence leakage or zein solubility and wet-combing force required to limit the ingredients included in the composition so as to achieve the required low level of ocular irritation and wet-combing force as required in appellants' claimed composition.

In fact, all of the examples disclosed in these references, many of the ingredients recited to be either suitable or preferred and most of the ranges recommended for the ingredients fall outside appellants' composition. Thus, without the total benefit of hindsight, a person of ordinary skill in the art would not only have had to ignore most of the teachings of the references cited by the Examiner as "prior art" to have arrived at a part of claim 17, but even then would not have had a composition that would have necessarily met the criticalities of low ocular irritation potential and low wet-combing force embodied in the last two elements of the claim.

Based on the foregoing considerations, appellants' respectfully submit that it is only through hindsight that appellants' claims 11-13 and 17 could be considered obvious from the teachings of Patel et al (US 6,165,454), Fairley et al (US2002/0192180), (WO 99/53889), WO 00/02532 or Baravetto et al combined with Booker et al (US 2003/0114323) and that a person of ordinary skill in the art could not have arrived at appellants' invention from a consideration of these reference.

Is claim 5 obvious under 35 USC §103 (a) as being unpatentable over Baravetto et al (US 6,174,552) as applied to claims 1-4, 6-10 and 13-16 and further in view of Fairley et al (US 2002/0192180)?

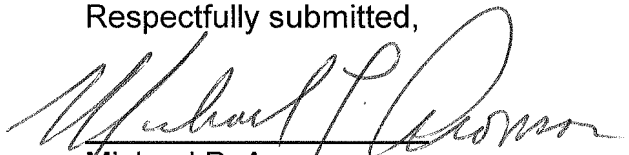
Claim 5 depends from claim 1. Neither Baravetto et al or Fairley et al alone or in combination render claim 1 obvious for the reasons already discussed and thus their combination does not render claim 5 obvious.

Are claims 5 and 6 obvious under 35 USC §103 (a) as being unpatentable over WO 00/02532 as applied to claims 1-4, 7-9, 15, 16, 19 and 20 in view of Fairley et al (US2002/0192180)?

Claims 5 and 6 depend from claim 1. Neither '532 or Fairley et al alone or in combination render claim 1 obvious for the reasons already discussed and thus their combination does not render claims 5 and 6 obvious.

In view of the forgoing comments, appellant requests the Board of Appeals and Interferences to reverse the Examiner's rejection of the claims.

Respectfully submitted,



Michael P. Aronson
Registration No. 50,372
Agent for Appellants

Tel. No. 201-894-2412 or 845-708-0188

VIII. CLAIMS APPENDIX

1. A mild aqueous shampoo composition having excellent detangling and conditioning properties comprising:

   i) about 6 to about 8% of an alkyl ethoxy sulfate surfactant wherein the alkyl group has an average of 12-16 carbon atoms and the degree of ethoxylation is at least 3,
   ii) from about 2% to about 7% of a betaine surfactant,
   iii) from about 2% to about 7% of a hydroxysultaine surfactant,
   iv) from about 0.1% to about 5% of a non-volatile, water-insoluble silicone,
   v) at least about 70 wt% water;
   vi) less than about 2% of an added surfactant selected from the group consisting of alkyl sulfates and alkyl or alkyl aryl sulfonates, ethoxylated alkylphenols and ethanolamides of aliphatic acids;

   wherein the weight ratio of the betaine surfactant to the hydroxysultaine surfactant is in the range of from about 0.5 to about 1.5, and the weight ratio of the alkyl ethoxy sulfate surfactant to the sum of the weights of betaine surfactant and hydroxysultaine surfactant is in the range of from about 0.5 to about 1.5; wherein the composition is not a potential eye irritant as measured by having either a Zein solubility of less than about 1% as measured by the Zein Solubility In-Vitro Assay or a % permeability of fluorescein leakage less than about 10% as measured by the Fluorescein Leakage Assay; and wherein the composition has a wet-combing force less than about 20 gm-force as measured by the Wet and Dry Combing Force In-Vitro Assay.

2. The composition according to claim 1, wherein the alkyl ethoxy sulfate surfactant is present at a level from about 5% to about 10% by weight of the composition.

3. The composition according to claim 1, wherein the betaine is selected from the group consisting of lauryl betaine, coco betaine, cocoamidobetaines, cocoamidopropyl betaine, oleyl betaine, caprylamidopropyl betaine, lauramidopropyl betaine, isostearylamidopropyl betaine, coco imidoazolinium betaine, and mixtures thereof.

4. The composition according to claim 1 wherein the hydroxysultaine is selected from the group consisting of alkylamidopropyl hydroxysultaine, lauryl hydroxysultaine, tallowamidopropyl hydroxysultaine, erucamidopropyl hydroxysultaine, and alkylether amidopropyl hydroxysultaine, and mixtures thereof.

5. The composition according to claim 1, wherein the non-volatile, water-insoluble silicone is a microemulsion.

6. The composition according to claim 1, wherein the non-volatile, water-insoluble silicone has a viscosity greater than 10,000 CST and is selected from the group consisting of dimethicone, dimethiconal, a cross-linked dimethicone or dimethiconal, a silicone gum, an organomodified silicone and mixtures thereof.

7. The composition according to claim 1 wherein the wt% ratio of the betaine surfactant to the hydroxysultaine surfactant is in the range of from about 0.75 to 1.25.

8. The composition according to claim 1, wherein the wt% ratio of the alkyl ethoxy ether sulfate to the sum of the betaine surfactant and the hydroxysultaine surfactant is in the range of about 0.7 to 1.3.

9. The composition according to claim 1 further comprising a cationically modified cellulose.

10. The composition according to claim 9 wherein the cationically modified cellulose is selected Polyquaterium-10.

11. The composition according to claim 1 further comprising a polyethylene glycol fatty diester selected from the group consisting of PEG 120 methyl glucoside dioleate, PEG-150 pentaerythrityl, PEG-75 dioleate, PEG-150 distearate and mixtures thereof.

12. The composition according to claim 11 wherein the polyethylene glycol fatty diester is PEG 150 distearate,

13. The composition according to claim 11 further comprising an electrolyte selected form the group consisting of sodium chloride, sodium citrate, sodium sulfate, sodium bromide, sodium iodide and mixtures thereof.

14. (cancelled):

15. The composition according to claim 1 further comprising aesthetic and adjunct shampoo ingredients selected from the group consisting of perfumes, pearlizing

and opacifying agents, interference pigments, dyes, colorants, sensates, preservatives, thickeners, emulsion stabilizers, and mixtures thereof.

16. The composition according to claim 1 further comprising skin and hair benefit agents selected from the group consisting of cholesterol, ceramides, and pseudoceramides, non-silicone hair conditioning agents, humectants, antimicrobial agents, sunscreens, chelating agents, botanical extracts, and mixtures thereof.

17. A mild aqueous shampoo composition having excellent detangling and conditioning properties consisting essentially of:

i) from about 6% to about 8% of an alkyl ethoxy sulfate wherein the alkyl group has an average of 12-16 carbon atoms and the degree of ethoxylation is at least 3.
ii) from about 2% to about 7% of a betaine surfactant selected from the group consisting of alkylamido betaine, alkyl betaine, and alkyl amidoalkyl betaine,
iii) from about 2% to about 7% of an alkylamido hydroxysultaine,
iv) from about 0.05% to about 2% of a cationically modified cellulose,
v) from about 0.1% to about 5% of a non-volatile, water-insoluble silicone,
vi) from about 0.02% to about 1.0% of a polyethylene glycol fatty diester,
vii) from about 0.1% to about 1.0% of an electrolyte selected from the group consisting of sodium chloride, sodium citrate, sodium sulfate, sodium bromide, sodium iodide and mixtures thereof.
viii) at least 70 wt% water;

ix) less than about 2% of an added surfactant selected from the group consisting of alkyl sulfates and alkyl or alkyl aryl sulfonates, ethoxylated alkylphenols and ethanolamides of aliphatic acids;

wherein the weight ratio of the betaine surfactant to the alkylamido hydroxysultaine is in the range of from about 0.5 to about 1.5, and the weight ratio of the alkyl ethoxy ether sulfate to the sum of the weights of betaine surfactant and alkylamido hydroxysultaine components is in the range of from about 0.5 to about 1.5;

wherein the shampoo composition is not a potential eye irritant as measured by having either a Zein solubility of less than about 1% as measured by the Zein Solubility In-Vitro Assay or a % permeability of fluorescein leakage less than about 10% as measured by the Fluorescein Leakage Assay; and

wherein the composition has a wet-combing force less than about 20 gm-force as measured by the Wet and Dry Combing Force In-Vitro Assay.

18. A method of shampooing children's hair to achieve clean, tangle-free, and conditioned hair without eye irritation said method comprising the step of treating the hair with the shampoo composition according to claim 1.

19. The composition according to claim 1 wherein the shampoo composition has a Zein solubility of less than about 1% as measured by the Zein Solubility In-Vitro Assay.

20. The composition according to claim 1 wherein the shampoo composition has a % permeability of fluorescein leakage less than about 10% as measured by the Fluorescein Leakage Assay.

IX. EVIDENCE APPENDIX

A. "First Declaration" filed under 37 CRF §1.132 dated April 17, 2006.

A copy of this declaration begins on the next page

PATENT
J6877(C)
03-0379-HC

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Dabkowski et al.
Serial No.: 10/764,114
Docket No. J6877(C)
Filed: January 23, 2004
For: MILD VISCOUS CLEANSING COMPOSITIONS WITH VERSATILE COMPATABILITY AND ENHANCED CONDITIONING

Group: 1751
Examiner: Delcotto, Gregory R
Englewood Cliffs, NJ 07632
April 17, 2006

DECLARATION FILED UNDER 37 CRF § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Cinda Sue Carlson, a citizen of the United States, residing at 1176 Wenonah Avenue, Oak Park Illinois 60304, do hereby declare that:

1. I hold the degree of Masters in Science in Chemistry from Illinois State University and am a member of American Chemical Society, Society of Cosmetic Chemists and Sigma Xi, The Scientific Research Society.

2. I am presently employed as a Senior Project Scientist by Unilever Home and Personal Care USA in the Hair Development Group located at 3100 Golf Road, Rolling Meadows, Illinois 60008. I have worked in the Unilever Hair Development Group at Rolling Meadows since 2002.

3. I have read Dabkowski et al, U.S. Patent Application S.N. 10/764,114, filed January 23, 2004, of which I am a named Inventor.

4. The experiments described below were carried out under my supervision and are reported accurately herein.

5. Experiments were carried out to distinguish the present invention from the disclosures of Patel et al in US 6,165,454, Baravetto et al in US 6,174,522, and Fairley et al in US 2002/01922180. In particular, the experiments demonstrate significant differences in intrinsic mildness as measured by Zein solubilization that reflect the critical differences between the types of surfactants used and their relative amounts in the compositions.

6. The examples selected for testing from the references cited as prior art during examination were chosen to be representative of the mildness compositions disclosed in the references.

7. The compositions, given in Table 1 below were prepared according to the descriptions given in each reference. The location of these descriptions are identified by column and line numbers in the Table 1. Each composition is a "full formulation" from the patent examples identified using the same materials described in the reference. The compositions were prepared during the period from March 28th to April 7th 2006. The methods of preparation were similar to those described in the references. However, some small modifications were made because of differences in available equipment. These process modifications are not expected to have any effect on the subsequent mildness results because the surfactant compositions are isotropic liquids, e.g., equilibrium solutions.

8. Each composition was tested under identical conditions for the amount of Zein protein that could be dissolved under standardized conditions. As discussed in Dabkowski et al (Page 27) zein solubilization is a widely used in-vitro method to asses the mildness of shampoo and skin cleansing compositions. The procedure employed is identical to that described by Dabkowski et al on pages 27 and 28 of the application.

9. The zein solubilization results are collected in Table 2 below. The results indicate that all of the example compositions tested that were disclosed in the references cited in examination have a zein solubility much greater than 1% and are expected to be irritating to eyes.

10. All statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and further these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this patent application or any patent issuing thereon.

Dated: 4/17/06

Cinda Sue Carlson

Cinda Sue Carlson

Table 1 Compositions Prepared

PATENT AND EXAMPLE NO.	INGREDIENTS	WT%	PREPARATION
Patel et al Ex 33 US 6,165,454 Example 33 Table F Column 13	Water	To 100%	Basic Method described on column 8, line 61 to column 9, line 60
	SLES-2EO (28%)	43	
	CAP betaine (30%)	13.34	
	Acuyln® 22 (30%)	5	
	Dimethicone (60,000)	3	
	Preservative (Kathon CG)	0.1	
Patel et al Ex 44 US 6,165,454 Example 44 Table G Column 15	Water	To 100%	Basic Method described on column 8, line 61 to column 9, line 60
	ALS (28%)	43	
	CAP betaine (30%)	16.67	
	Acuyln® 33 (28%)	7.14	
	TAB-2	2.5	
	Zinc Pyrithione "ZPT", 50%	2.0	
	Preservative (Kathon CG)	0.1	
Patel et al Ex 55 US 6,165,454 Example 55 Table H Column 15	Water	To 100%	Basic Method described on column 8, line 61 to column 9, line 60
	SLES-2EO (28%)	43	
	Polyquaternium 7 (8%)	2.5	
	CAP betaine (30%)	13.34	
	CDEA	0.5	
	Acuyln® 33 (28%)	5.9	
	Dimethicone (60,000)	3.0	
	Preservative (Kathon CG)	0.1	
	DSDAC	0.2	
Patel et al Ex 73 US 6,165,454 Example 73 Table K Column 19	Water	To 100%	Basic Method described on column 8, line 61 to column 9, line 60
	SLES-2EO (28%)	33.0	
	Polyquaternium 10 (100%)	0.35	
	Polyquaternium 7 (30%)	3.0	
	CAP betaine 30%	17.0	
	CDEA (90%)	0.6	
	Acuyln® 33 (28%)	5.89	
	Dimethicone (60,000)	3.5	
	DSDAC	0.25	
	Preservative (Kathon CG)	0.1	

Table 1 - Continued

Baravetto et al Ex VI US 6,174,522 Middle Table Column 24	Ammonium laureth-3 sulfate	14	Method of preparation described at column 23, line 40 to column 24, line 9
	Cocoamidopropylbetaine	2.7	
	Polyquaternium 10	0.15	
	Cocamide MEA	0.8	
	Ethylene glycol distearate	1.5	
	Dimethicone (1)	1.0	
	Dimethicone (4)	1.5	
	Perfume	0.7	
	DMDM Hydantoin	0.37	
	Water	To 100%	
Baravetto et al Ex X US 6,174,522 Middle Table Column 24	Ammonium laureth-3 sulfate	12.5	Method of preparation described at column 23, line 40 to column 24, line 9
	Cocoamidopropylbetaine	4.2	
	Polyquaternium 10	0.15	
	Cetyl alcohol	0.42	
	Stearyl alcohol	0.18	
	Ethylene glycol distearate	1.5	
	Dimethicone (1)	1.0	
	Dimethicone (4)	2.25	
	Perfume	0.7	
	DMDM Hydantoin	0.37	
	Water	To 100%	
Fairley et al Ex 1 US2002/01922180 Table, Page 8 Example 1	Carbopol 980	0.4	Method of preparation as described at paragraph [0148]
	SLES-2EO	14.0	
	CAPB	2.0	
	Jaguar C13S	0.1	
	Perfume	0.6	
	Glydant plus	0.2	
	Soybean oil	3.0	
	Sodium Chloride	1.0	
	BHT	0.24	
	Water	To 100%	

Table 2 Comparison of disclosed compositions in zein protein solubilization

COMPOSITION	%ZEIN SOLUBILIZED[ab]
Patel et al Ex 33	2.25 ±0.10
Patel et al Ex 44	3.27 ±0.09
Patel et al Ex 55	2.67 ±0.05
Patel et al Ex 73	1.63 ±0.08
Baravetto et al Ex VI	2.07 ±0.04
Baravetto et al Ex X	1.91 ±0.01
Fairley et al Ex 1	3.11 ±0.07

a) See p 27 of Dabkowski et al, U.S. Patent Application S.N. 10/764,114, filed January 23, 2004.
b) Results are an average of five repeats.

B. "Second Declaration" filed under 37 CRF §1.132 dated September 28, 2006.

A copy of this declaration begins on the next page

PATENT
J6877(C)
03-0379-HC

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Dabkowski et al.
Serial No.: 10/764,114
Docket No. J6877(C)
Filed: January 23, 2004
For: MILD VISCOUS CLEANSING COMPOSITIONS WITH VERSATILE COMPATABILITY AND ENHANCED CONDITIONING

Group: 1751
Examiner: Delcotto, Gregory R
Englewood Cliffs, NJ 07632
September 28, 2006

DECLARATION FILED UNDER 37 CRF § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Cinda Sue Carlson, a citizen of the United States, residing at 1176 Wenonah Avenue, Oak Park Illinois 60304, do hereby declare that:

1. I hold the degree of Masters in Science in Chemistry from Illinois State University and am a member of American Chemical Society, Society of Cosmetic Chemists and Sigma Xi, The Scientific Research Society.

2. I am presently employed as a Senior Project Scientist by Unilever Home and Personal Care USA in the Hair Development Group located at 3100 Golf Road, Rolling Meadows, Illinois 60008. I have worked in the Unilever Hair Development Group at Rolling Meadows since 2002.

3. I have read Dabkowski et al, U.S. Patent Application S.N. 10/764,114, filed January 23, 2004, of which I am a named Inventor.

4. The experiments described below were carried out under my supervision and are reported accurately herein.

5. Experiments were carried out to distinguish the present invention from the disclosures of Patel et al in US 6,165,454, Baravetto et al in US 6,174,522, and Fairley et al in US 2002/01922180. In particular, the experiments demonstrate significant differences in potential for ocular irritation as measured by the Fluorescein Leakage Assay between the types of surfactants used and their relative amounts disclosed in these compositions relative to the compositions disclosed in the Dabkowski et al application.

6. The specific examples selected from the above references were chosen because they are believed to represent the mildest and least irritating compositions to eyes among all the compositions disclosed in the references. They are the same examples previously evaluated for zein solubility as reported in an earlier declaration dated April 17, 2006.

7. The compositions given in Table 1 below were prepared according to the written descriptions given in each reference. The locations of these descriptions are identified by column and line numbers in the Table 1. Each composition is a "full formulation" from the patent examples identified using the same materials described in the reference. The methods of preparation were similar to those described in the references. However, some small modifications were made because of differences in available equipment. These process modifications are not expected to have any effect on the ocular irritation potential results because the compositions are isotropic (equilibrium) liquids.

8. Each composition of Table 2 was tested during the period August 30, 2006 to September 2, 2006 under identical conditions for the amount of sodium fluorescein that penetrates the cell junctions after standardized treatment with test compositions. The tests were carried out by Dr. Ruy Tchao of University of the Sciences in Philadelphia, Philadelphia College of Pharmacy. As discussed in Dabkowski et al (Page 26) Flourescein leakage is a widely used

in-vitro method to asses to assess potential ocular irritation of surfactant containing cleansing compositions. The procedure employed is identical to that described in Dabkowski et al on pages 26 and 27 of the application. The results reported previously in example 1 for compositions prepared according to Dabkowski et al (SN 10/764,114 – Page 38, Ex 1A and Ex 1B) are also provided for comparison in Table 2. Finally, the results for positive and negative controls know to induce significant and negligible eye irritation respectively are set forth in last two rows of Table 2.

9. The % permeability values (initial, 24 hours and combined score) are collected in Table 2 below. The results indicate that all of the tested example compositions disclosed in the references cited in examination induce a % permeability around 10% at initial exposure however upon a 24 hour recovery period the permeability increases to levels well above 10% (combined score 40% and higher) that indicates moderate to significant irritation to eyes. In contrast compositions of Ex 1A and Ex 1B according to Dabkowski et al, U.S. Patent Application S.N. 10/764,114 induce a permeability of less than 10% immediately after initial exposure and remains below 10% at 24 hours recovery. The Dabkowski et al compositions are expected to be slight to non-irritant which is confirmed in practice (such compositions are currently sold as "no-tears" children's shampoos by Unilever).

10. As expected, the Fluorescein Leakage Assay results discussed herein are consistent with the Zein Solubility Assay results communicated earlier in a Declaration dated April 17, 2006. Taken together, the results demonstrate that the compositions disclosed in the references cited in the Office Actions would be unsuitable for a shampoo or body wash intended not to irritate eyes or be ultra mild to skin such as a conditioning shampoo for children.

11. All statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and further these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this patent application or any patent issuing thereon.

Dated: 9/28/06

Cinda Sue Carlson

Cinda Sue Carlson

Table 1 Compositions Prepared

PATENT AND EXAMPLE NO.	INGREDIENTS	WT%	PREPARATION
Patel et al Ex 33 US 6,165,454 Example 33 Table F Column 13	Water	To 100%	Basic Method described on column 8, line 61 to column 9, line 60
	SLES-2EO (28%)	43	
	CAP betaine (30%)	13.34	
	Acuyln® 22 (30%)	5	
	Dimethicone (60,000)	3	
	Preservative (Kathon CG)	0.1	
Patel et al Ex 44 US 6,165,454 Example 44 Table G Column 15	Water	To 100%	Basic Method described on column 8, line 61 to column 9, line 60
	ALS (28%)	43	
	CAP betaine (30%)	16.67	
	Acuyln® 33 (28%)	7.14	
	TAB-2	2.5	
	Zinc Pyrithione "ZPT", 50%	2.0	
	Preservative (Kathon CG)	0.1	
Patel et al Ex 55 US 6,165,454 Example 55 Table H Column 15	Water	To 100%	Basic Method described on column 8, line 61 to column 9, line 60
	SLES-2EO (28%)	43	
	Polyquaternium 7 (8%)	2.5	
	CAP betaine (30%)	13.34	
	CDEA	0.5	
	Acuyln® 33 (28%)	5.9	
	Dimethicone (60,000)	3.0	
	Preservative (Kathon CG)	0.1	
	DSDAC	0.2	
Patel et al Ex 73 US 6,165,454 Example 73 Table K Column 19	Water	To 100%	Basic Method described on column 8, line 61 to column 9, line 60
	SLES-2EO (28%)	33.0	
	Polyquaternium 10 (100%)	0.35	
	Polyquaternium 7 (30%)	3.0	
	CAP betaine 30%	17.0	
	CDEA (90%)	0.6	
	Acuyln® 33 (28%)	5.89	
	Dimethicone (60,000)	3.5	
	DSDAC	0.25	
	Preservative (Kathon CG)	0.1	

Table 1 - Continued

Baravetto et al Ex VI US 6,174,522 Middle Table Column 24	Ammonium laureth-3 sulfate	14	Method of preparation described at column 23, line 40 to column 24, line 9
	Cocoamidopropylbetaine	2.7	
	Polyquaternium 10	0.15	
	Cocamide MEA	0.8	
	Ethylene glycol distearate	1.5	
	Dimethicone (1)	1.0	
	Dimethicone (4)	1.5	
	Perfume	0.7	
	DMDM Hydantoin	0.37	
	Water	To 100%	
Baravetto et al Ex X US 6,174,522 Middle Table Column 24	Ammonium laureth-3 sulfate	12.5	Method of preparation described at column 23, line 40 to column 24, line 9
	Cocoamidopropylbetaine	4.2	
	Polyquaternium 10	0.15	
	Cetyl alcohol	0.42	
	Stearyl alcohol	0.18	
	Ethylene glycol distearate	1.5	
	Dimethicone (1)	1.0	
	Dimethicone (4)	2.25	
	Perfume	0.7	
	DMDM Hydantoin	0.37	
	Water	To 100%	
Fairley et al Ex 1 US2002/01922180 Table, Page 8 Example 1	Carbopol 980	0.4	Method of preparation as described at paragraph [0148]
	SLES-2EO	14.0	
	CAPB	2.0	
	Jaguar C13S	0.1	
	Perfume	0.6	
	Glydant plus	0.2	
	Soybean oil	3.0	
	Sodium Chloride	1.0	
	BHT	0.24	
	Water	To 100%	

Table 2. % Permeability based on Fluorescein Leakage Assay

COMPOSITION	% PERMEABILITY BASED ON FLUORESCEIN LEAKAGE[a]		
	Initial	After 24 hrs	Combined Score
Compositions Disclosed in References Cited in Office Action Mailed 7/14/2006			
Patel et al Ex 33	13.0+/-2.2	64.2+/-10.6	77.2
Patel et al Ex 44	8.4+/- 0.7	49.1+/- 3.5	57.5
Patel et al Ex 55	11.1+/- 1.7	60.4+/- 9.9	71.5
Patel et al Ex 73	9.2+/- 1.6	47.5+/- 3.4	56.7
Baravetto et al Ex VI	11.9+/- 1.5	43.1+/- 4.5	55.0
Baravetto et al Ex X	12.2+/- 2.5	28.2+/- 8.4	40.4
Fairley et al Ex 1	12.2+/- 0.8	62.6+/- 16.9	74.8
Composition According to Dabkowski et al SN 10/764,114			
Ex 1A (page 38)	6.0+/- 0.9	1.0+/- 0.4	7
Ex 1B (page 38)	7.8+/- 0.9	1.0+/- 0.5	8.8
Controls			
Positive (Sodium Dodecyl Sulfate Solution)	9.2+/-1.0	36.2+/-14.7	45.4
Negative (HBSS buffer solution)	0.2+/-0	1.0+/-0.3	1.2

a) See p 26 of Dabkowski et al, U.S. Patent Application S.N. 10/764,114, filed January 23, 2004

X. RELATED PROCEEDINGS APPENDIX

None